Allergy Abstracts

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Asthma and Hay Fever

Preparation and Properties of a Purified Ragweed Extract. Goldfarb, A. R., Moore, D. H., Rapaport, H. G., Sklarofsky, B., Gettner, H. H., and Abramson, H. A.: Proc. Soc. Exper. Biol. & Med. **85**: 255, 1954.

A purified giant ragweed extract was obtained by utilizing 90 per cent methanol to remove pigment from the pollen grains. Electrophoretic separation was also used to obtain a purified ragweed extract. Both extracts were analyzed electrophoretically to determine specific extinction absorption curves and electrophoretic patterns. The biologic activity of the methanol-treated extract was compared to that of a crude ragweed extract by comparative skin testing on five ragweed-sensitive patients.

Methanol-treated extracts showed a marked depression of the absorption bands at about 2,600 Å and 3,600 Å, which are prominent in crude aqueous ragweed extracts. Electrophoretically separated extracts showed a marked band at 2,600 Å, but none at 3,600 Å.

Electrophoretic analysis of the aqueous extract of methanol-treated ragweed pollen revealed a new, essentially unpigmented fraction with a mobility of 0.34 μ per second that formed after removal of the pigments.

Biologic activity of the essentially pigment-free preparation was identical with that of the preparation containing all the pigment. It was concluded that pigment does not contribute substantially to biologic activity. M. C.

Dermatology

Hydrocortisone Ointment in the Treatment of Infantile Eczema. Witten, V. H., Amler, A. B., Sulzberger, M. B., and DeSanctis, A. G.: Am. J. Dis. Child. **87**: 298, 1954.

Thirty youngsters with infantile eczema were selected at random from a pediatric clinic as subjects of this study. A control ointment containing wool fat U.S.P. 15 per cent, liquid petrolatum 10 per cent and white petrolatum 75 per cent was prepared. Hydrocortisone free alcohol was added in a 2.5 per cent concentration to the control ointment and was employed for purposes of evaluating its therapeutic effect. The hormone ointment was always placed on one extremity or on one side of the body and the control ointment was placed on the contralateral area of the body. Any previous therapy which the patient had been receiving, such as special nursing care or psychiatric therapy, was not interrupted. The only deviation from the normal routine was to change the dermatologic care from the usual salves and ointment to the afore-mentioned therapy. Careful examinations were made on each visit to the clinic.

A favorable response was obtained from the hydrocortisone ointment in about 67 per cent of the cases. Mothers stated that the improvement often began within twenty-four to forty-eight hours after the first application of the ointment. In many cases, some improvement was also noted on the side treated with the control ointment. It was thought that this was due to a spreading of the cortisone ointment by means of clothing, towels, or bed linen, from one side of the body to the other. No instance of intolerance to the medication was observed, and at no time was it necessary to discontinue the ointment because of clinical evidence of irritation or allergic eczematous contact dermatitis. Nine infants under 14 months of age had approximately one-half or more of the body surface inuncted with the hormone ointment 2 or 3 times a day for from 1 to 7 weeks without evidence of undesirable systemic effects due to the absorption of the hydrocortisone. The authors conclude that hydrocortisone ointment as used in these studies constitutes the simplest, cleanest, and most rapidly effective of all topical measures employed by them in the treatment of infantile eczema. R. W.

Eosinophilic Response After Inunction of Hydrocortisone Ointment. Smith, C. C.: Arch. Dermat. & Syph. **68**: 50, 1953.

The local application of hydrocortisone acetate ointment has a favorable effect on a number of dermatoses in which topically applied cortisone has been ineffective. This has been explained by the possible percutaneous absorption of the former with systemic effects. Since it is known that a reduction in circulating eosinophils regularly follows the oral administration or injection of cortisone and hydrocortisone, this index was employed as a measure of absorption or nonabsorption of the topically applied hydrocortisone.

Six grams of an ointment containing a total of 150 mg. of hydrocortisone acetate was rubbed into normal skin areas of 8 volunteers and into affected

skin areas of 7 patients with generalized skin disease. A base line circulating eosinophil count was done the day prior to the inunction and circulating eosinophil counts were repeated four, six, and twenty-eight hours after inunction. A similar control study was done on the same 8 volunteers after two weeks with the ointment base alone. Comparison of the eosinophil counts taken after the inunction of hydrocortisone acetate ointment with the base line eosinophil counts revealed no consistent alteration in the counts either in the normal volunteers or in the hospitalized patients with generalized skin disease. This would indicate that there was either no absorption or insufficient absorption to produce a drop in the circulating eosinophil count.

The lack of experimental evidence of significant absorption on topical application offers a possible explanation for the reported complete absence of systemic ill effects from prolonged clinical use of hydrocortisone ointment in the treatment of skin diseases. C.

Hydrocortisone (Compound F) Acetate Ointment in Eczema of Infants and Children. McCorriston, L. R.: Canad. M. A. J. **70**: 59, 1954.

One hundred and four children between the ages of one month and 10 years suffering from eczema were treated topically over an 8-month period with hydrocortisone ointment in varying concentrations and in various bases. All the children had been somewhat refractory previously to local therapy, including 3 per cent Vioform ointment. In certain patients, different concentrations of hydrocortisone acetate ointment (1 per cent and 2.5 per cent) were rubbed on symmetrical skin lesions to ascertain their respective value. In others, the hormone therapy was applied to one arm and the vehicle was used as a control on the opposite arm. The following vehicles were used: 1. zinc stearate, propylene glycol, polyethylene glycols and water; 2. white petrolatum; 3. veegum h.v., titanium dioxide, isopropanol, pluronic F-68, methyl paroben, propyl paroben, and aqua destillata; 4. cetyl styryl alcohol, sodium lauryl sulfate, soft white paraffin, liquid paraffin. All patients were seen at 1-week intervals.

Many mothers stated that an improvement was observed within twenty-four or forty-eight hours after instituting hydrocortisone therapy. There was a lessening of pruritus, a diminution in weeping, and a softening of the licheniform lesions. In each patient, the hydrocortisone ointment produced greater improvement than the control substance; in many youngsters, the 2.5 per cent ointment was more effective than the 1 per cent concentration. Most of the children showed a 75 to 100 per cent improvement in their eczema and, in 60 per cent of the cases, the improvement was maintained after stopping the therapy. Some patients noticed improvement in areas distal to the site of application of the hormone suggesting a possible systemic effect. In one patient who applied rather substantial quantities of the 2 per cent strength, no elevation of 17-ketosteroids, creatinine, or corticoids excretion was obtained. No allergic sensitization to the ointment was observed. It is suggested that hydrocortisone ointment may be a very effective agent for treating infantile eczema. R. W.

Observations on the Persistence of Skin Sensitivity With Reference to Nickel Eczema. Morgan, J. K.: Brit. J. Dermat. **65**: 85, 1953.

Fifty-four patients known to be sensitive to nickel were retested after an interval of from eighteen months to eleven years. These patients had originally been patch tested with one drop of a 10 per cent solution of nickel sulfate placed on a small square of lint and fixed to the upper arm or back.

Of the 54 patients retested, 31 (57 per cent) still showed positive reactions while the remaining 23 had become negative during the elapsed period of time. Most of the positive reactors remained free of symptoms when they avoided contact with the offender and had flare-ups with contact. Of the 23 negative reactors, 5 had avoided contact with nickel (with the exception of coinage), 18 had not avoided nickel contact. Of the 5 who avoided contact, 4 had continued to suffer almost constantly from eczema affecting various areas which were in direct contact with nickel. Of the 18 who continued to wear nickel articles and had negative patch reactions, 4 had remained free of eczema and 14 had persistent or intermittent eczema. Hence, the response of negative reactors could not be explained on the basis of possible hardening or avoidance or contact. It is suggested that the specific sensitivity to nickel in some cases can be regarded as merely a transitory phase in the course of a series of eczematous reactions, many of them nonspecific in character. Since the majority of patients who became insensitive to nickel continued to have eczema, it would appear that the constitutional background of the individual is often of greater significance in the prognosis than the discovery of the specific agent. E. W.

Observations on Cholinogenic Urticaria. Morgan, J. K.: J. Invest. Dermat. **21**: 173, 1953.

Urticaria was consistently induced in 2 patients by physical exertion and in another by immersion of the forearm in hot water. The latter patient also had dermographism. The lesions were more intense on the upper trunk than elsewhere. The systemic administration of a cholinergic drug regularly provoked widespread attacks of urticaria, which could be prevented by the prior administration of atropine. Intracutaneous tests with acetylcholine produced larger wheals in the 3 patients than in normals. The whealing response to histamine in these patients was within normal limits. Blood cholinesterase levels were decreased in all 3 cases. These findings were considered characteristic of cholinogenic urticaria and reflected the accepted view that an abnormal response to choline esters is the basic feature of this disease.

In further studies, local unresponsiveness developed in skin areas which were treated with an inunction of 5 per cent tetrahydrofurfuryl nicotinic acid ("Trafuril"), an urticariogenic, histamine-liberating substance. Repeated applications of this compound on succeeding days provoked gradually diminishing responses until no reaction occurred. When generalized attacks of urticaria were then induced, lesions did not develop on these sites. This was considered evidence to support the view that the presence of histamine is necessary for the full clinical picture of cholinogenic urticaria to develop. M. C.

Miscellaneous Allergies

Distribution of Allergic and "Blocking" Activity in Human Serum Proteins Fractionated by Electrophoresis Convection. Loveless, M. H., and Cann, J. R.: Science **117**: 105, 1953.

The serum of a patient who was highly allergic to commercial insulin was fractionated by a seven-stage electrophoresis-convection method. Reaginic activity of the serum was measured by the serum dilution passive transfer technique and by in vitro neutralization with allergen.

High reaginic activity was exhibited by Tops 6 and 7, which contained large proportions of beta-globulin. The neutralizing power of beta-globulin

per milligram was calculated to be more than twenty times that of either the gamma- or the alpha-globulins. It was therefore concluded that reaginic activity is associated almost exclusively with beta-globulin.

A serum containing reagins for ragweed pollen was also studied. Activity in this serum was found to be concentrated in beta-globulin. Thermostable or "blocking" antibody was concentrated in the gamma-globulins. M. C.

Anaphylaxis

Variations in Sensitivity to Anaphylaxis and to Histamine in Inbred Strains of Mice. Fink, M. A., and Rothlauf, M. V.: Proc. Soc. Exper. Biol. & Med. **85**: 336, 1954.

Mice of five different strains, which were sufficiently inbred to insure genetic uniformity in succeeding generations, were injected intra-abdominally with alum-precipitated egg white at regular intervals. They were then tested for anaphylaxis with an intravenous injection of crystalline egg albumin. Other members of the same strains were tested intravenously with histamine to determine their sensitivity to this drug.

Signs of anaphylaxis in the five strains occurred in 23, 36, 47, 85, and 97 per cent, respectively. The anaphylactic response could not be correlated with the amount of circulating antibody. One strain of mouse, which was more resistant to anaphylaxis than the others, was also found to be more resistant to histamine. A second strain, however, which was very susceptible to anaphylaxis, showed no greater sensitivity to histamine than the others.

The mechanism of anaphylaxis in the mouse is obscure. A genetic variation in the ability of mice sensitized to egg albumin to respond to a subsequent intravenous injection of this antigen by anaphylactic shock was demonstrated. M. C.

Pharmacology, Physiology, and Pathology

Studies on the Antibodies in Rabbit Antisera Responsible for Sensitization of Human Skin. I. The Role of Impurities in Crystalline Egg Albumin in Stimulating the Production of Skin-Sensitizing Antibody. Vaughan, J. H., and Kabat, E. A.: J. Exper. Med. **97**: 821, 1953.

Three groups of rabbits were given two identical one-month courses of immunization with thrice-crystallized egg albumin. Group A received this antigen intravenously as an alum precipitate and showed the greatest antibody response as measured by quantitative antibody nitrogen determinations. Group B, immunized with egg albumin solution intravenously, showed an intermediate response. Group C, immunized with alum-precipitated egg albumin intracutaneously, gave the poorest antibody response. Agar diffusion studies were carried out by mixing serial dilutions of immune serum with agar in 18 cm. long diffusion tubes. After these hardened, antigen mixtures were overlayered and the tubes were observed for a period of twelve days. The precipitation bands which formed at different levels in the tubes, depending on the rate of diffusion of each antigen, were an indication of the number of antigen-antibody systems present. Thus, in the anti-Ea sera, traces of precipitating antibodies were found for ovomucoid (Ovo), lysozyme (Lyso), and conalbumin (Ca), but only anti-Ca appeared with any degree of regularity. However, more precipitation bands were formed than could be accounted for on the basis of these four antigen-antibody systems.

Passive transfer to human skin was effected with only fair results with serum from animals immunized for one month, but stronger reactions were

produced with sera obtained after the two-month immunization course. "No correlation could be found between sensitizing ability and anti-Ea content, nor was there a correlation between sensitizing ability and anti-Ca, anti-Ovo, or anti-Lyso." The animal group (C) showing the poorest over-all response in antibody formation showed the least passive transfer reactivity. Group B, comprised of animals immunized with egg albumin solution intravenously, showed the greatest passive transfer reactions, though not the highest antibody titers. The animals immunized with alum-precipitated albumin intravenously were intermediate with respect to passive transfer activity, though they had shown the greatest antibody response. Whole egg white was more potent in eliciting passive transfer responses than was Ea, and with some sera crystalline conalbumin was about as effective as egg white. Ovomucoid and lysozyme also reacted in some of the transfers. When all precipitable anti-Ea was removed from the serum, passive transfer responses to egg albumin remained unimpaired. Similar experiments with anti-Ca and anti-Lyso likewise failed to show reduction in the size of the wheal-flare passive transfer reaction on removal of the precipitable antibodies. In order to reduce or neutralize the skin-sensitizing capacity of strong sera, high concentrations of antigen were needed, often 100 times more than was required to remove the precipitable antibodies. Near neutralization was easier to obtain with sera of relatively weak passive transfer activity.

Absorption of nonprecipitating anti-Ea did not diminish passive transfer activity. The evidence seems to point to the presence of at least two separate antibody systems in the anti-Ea sera which are capable of sensitizing human skin and which represent impurities in crystalline egg albumin other than conalbumin, ovomucoid, and lysozyme. It no longer may be assumed without direct evidence that a crystalline protein is pure to the point where biologic reactions must necessarily be a result of the major constituent of that protein. Minute traces of contaminants may elicit extraordinary antibody responses.

K.

Distribution of Sensitizing Antibody in Human Serum Proteins Fractionated by Electrophoresis-Convection. Cann, J. R., and Loveless, M. H.: J. Immunol. **72**: 270, 1954.

The distribution of sensitizing antibodies in the serum proteins of a cottonseed-sensitive subject and a ragweed-sensitive subject was studied by means of electrophoresis-convection. With this method, fractionation of the sera was effected by a stepwise lowering of pH levels from 8.1 to 5.2. The remainder was treated with saturated ammonium sulfate to provide the last of the ten fractions which were obtained.

Samples of the fractions were assayed for N content, then concentrated to 1 per cent protein by pervaporation and then analyzed electrophoretically. The immunologic activity of each fraction was measured by the passive transfer technique. Neutralization tests and serum dilution titrations were carried out.

Reaginic activity was found to be concentrated in fractions Va, Vb, and VI, which were composed of molecules immobilized by electrophoresis-convection at pH 6 or 5.5. These fractions contained large quantities of beta-globulin and smaller amounts of gamma$_1$-globulin.

The analysis of the relationship between immunologic activity and electrophoretic composition of the ten fractions isolated from each serum suggested that beta-globulins were mainly responsible for the reaginic activity of these sera. However, the gamma$_1$-globulins could not be excluded from this category.

M. C.

Remission of Intractable Allergic Symptoms by Acute Intercurrent Infections. Fries, J. H., and Borne, S.: Ann. Int. Med. **38**: 928, 1953.

Thirty-two atopic children experienced temporary remissions of their allergic symptoms following intercurrent febrile infections. Sixteen children had had severe persistent allergic symptoms including daily asthma, constant perennial allergic rhinitis, and marked atopic eczema for long periods of time prior to the occurrence of the infection. Eleven subjects developed measles, two pneumonia, one scarlet fever, and two upper respiratory infections with sore throats. Remissions were usually apparent at the height of the febrile period of the infection and lasted a few weeks in most cases. The allergic symptoms invariably recurred following recovery from the infection.

In one group of children with atopic eczema, the development of Kaposi's varicelliform eruption induced marked temporary clearing of the eczema. Relapse of the eczema occurred after the infection subsided.

Fever seemed to be the factor most responsible for the beneficial effect. Measles was the infection which consistently produced a temporary anergic response. Cutaneous inflammation, such as occurs in measles and in Kaposi's varicelliform eruption, is thought to induce refractoriness of the skin, which probably accounts for the marked improvement in the cases of atopic eczema. The mechanism of the reaction is not understood. Fever may influence the release of steroid hormones, producing an ACTH-like effect, or the beneficial effects may be the result of increased histaminolytic activity.

Infections and fever do not always inhibit the allergic state. Infections, especially those accompanied by slight fever, often have an adverse effect.

The literature on this subject is reviewed and tabulated. J. S.

Coronary Dilator Action. III. Effect of Several Antihistamine Compounds on Coronary Blood Flow in the Intact Dog. Winbury, M. M.: J. Pharmacol. & Exper. Therap. **110**: 300, 1954.

Anesthetized dogs were prepared for direct quantitative measurement of coronary blood flow by a recording rotameter in circuit between one of the carotid arteries and the descending branch of the left coronary artery. Antihistamine compounds were injected directly into the coronary circulation. The peak effect was noted in thirty seconds, with return to the control rate in two to five minutes. Coronary dilator activity was not associated with any consistent alteration of blood pressure, heart rate, stroke volume, peripheral resistance, cardiac output, or cardiac work. Coronary resistance was uniformly reduced. The degree of increase in flow ranged from 10 to 90 per cent greater than the control level. Doses used varied from 0.25 to 2.0 mg. per dog. Coronary dilator potency for R-P 3015 was 190 per cent of control value; Phenergan, 72 per cent; Benadryl, 59 per cent; Diparcol, 51 per cent; Neoantergan, 30 per cent; and Pyribenzamine, 6 per cent. The compound R-P 3015 was effective after rapid intravenous injection, with the flow rate returning to normal in about five minutes. K.

The Antigenicity of Rat Collagen. Watson, R. F., Rothbard, S., and Vanamee, P.: J. Exper. Med. **99**: 535, 1954.

Collagen obtained from the tail tendons of rats was dissolved in cold dilute acetic acid, precipitated by sodium hydroxide, washed, and then acidified, frozen, and dried. The purity of this product was tested in various ways. The precipitated material was free of visible cells, stained like collagen, and

the reconstituted fibers showed typical collagen striations. The ultraviolet light absorption was typical of collagen. Purified collagen was injected intraperitoneally in rabbits four times weekly for eight to twelve weeks and booster injections were subsequently administered. Complement-fixing antibodies in low titer (1:16 to 1:32, antigen dilution vs. undiluted serum) were found at the eighth to twelfth week. After three to six months, the titers rose to more significant levels. Thirty-three rabbits were immunized and in twelve of these the titers ranged from 1:128 to 1:1024. A prozone phenomenon was noted. The possibility that contaminants other than collagen might have accounted for the antibody response was carefully considered. It was found that the rat collagen preparation did not react with antiserum prepared to rat serum and that rat serum failed to react with anti-collagen serum. Faint reactions were obtained, indicating the presence of a polysaccharide in the collagen preparation. However, when the collagen was denatured by pepsin and pancreatin to the point of destruction of its antigenicity, the polysaccharide reaction remained. Furthermore, the digested material did not inhibit the fixation of complement. Collagenase toxin, derived from culture of *Clostridium welchii* both disintegrated the collagen and destroyed its serologic activity, although it did not affect the antigenicity of protein of type 6, group A hemolytic streptococcus, Matt strain (type 6 M extract). Trypsin only slightly denatured collagen, but did destroy type 6 M extract's antigenicity. Electron microscopic study showed that the addition of collagen in solution to normal rabbit serum resulted in the formation of collagen fibers, some of which showed definite periodicity. In contrast, when collagen in solution was added to homologous antiserum, all the fibers formed were poorly formed and a globular precipitate of collagen material resulted. In the presence of antibody, the macromolecules of collagen in solution are coated by antibody so that fiber formation cannot take place and the material is precipitated in globular form. Fibrin was studied also to clarify this reaction and it was found that fibrin solution added to normal rabbit serum clotted, whereas fibrin solution added to antibovine-fibrinogen rabbit serum failed to clot but showed a white precipitate. Both purified collagen and native rat collagens absorbed the antibodies from the collagen antiserum, indicating that the purified material had not been greatly altered from its native state and that native collagen exists in a reactive form. Heterologous collagen from fish and guinea pig sources failed to absorb rat collagen antibodies, indicating the existence of species specificity of collagen. Collagen from tendons of the legs and back of the rat was found to be identical to that from the tail tendons. Six electron micrographs are presented. K.

Quantitative Studies of Acute Nephrotoxic Nephritis in Rats. Weinreb, M. S., Soules, K. H., and Wissler, R. W.: Am. J. Path. **30**: 311, 1954.

The effects of the active immunization of one species with the kidney tissue of another species have been reported by various workers. Varying results have been described, but the fundamental processes by which the resulting nephrotoxic antisera produce renal lesions are still obscure. The nephrotoxic nephritis so produced was investigated in rats. The influence on the disease of such factors as diet, weight of the animals, dosage of nephrotoxic serum injected, and the duration of the induced state was studied.

The acute process produced in rats may resemble either nephrotic nephritis or lipid nephrosis in man, depending on the severity of the process. The chronic process induced by the same procedure simulates chronic glomerulonephritis with nephrotic clinical manifestations. J. S.

Miscellaneous

Acute Iodism Following Use of Chloriodized Oil (Iodochloral) in Bronchography. Report of a Case. Asch, M.: Arch. Otolaryng. **58**: 536, 1953.

Twenty-one nonfatal and 9 fatal cases of acute iodism following bronchography with iodized oil have been reported. The author presents the first recorded case of acute iodism and bronchopneumonia following bronchography with chloriodized oil (Iodochlorol), a chlorinated-iodized peanut oil commonly used as a contrast agent in bronchography. The introduction of both chlorine and iodine at the unsaturated carbon atom is said to result in a more stable compound than results when iodine is used alone. Chloriodized oil contains 27 per cent iodine and 7.5 per cent chlorine organically combined with a highly refined peanut oil.

Two days following bronchography with chloriodized oil, a 53-year-old white man developed chest pain and localized plaques of edema involving the buttocks, forearms, and fingers. This was accompanied by generalized aches, malaise, hemoptysis, and dyspnea. The patient became acutely ill and developed a temperature of 100.4° F. There were generalized areas of angioneurotic edema and acneform lesions with necrotic centers. X-rays showed an interstitial pneumonitis. Total serum iodine was 65 micrograms per 100 c.c. With antibiotic therapy and postural drainage the pneumonic process resolved uneventfully. It is suggested that some of the iodized oil was swallowed during the bronchography procedure, and that after digestion by the gastrointestinal enzymes, iodine was liberated and absorbed into the circulation from the intestinal mucosa. This could explain the elevated serum iodine and the symptoms of acute iodism. C.

Fate of Antibody Following in Vivo Combination With Specific Antigen. Dixon, F. J., and Maurer, P. H.: Proc. Soc. Exper. Biol. & Med. **84**: 442, 1953.

Forty-eight hours after the intravenous injection of antibody for bovine serum albumin (BSA) labeled with I^{131}, rabbits were given the specific antigen by the intravenous route. Another group of rabbits received the antigen first and the labeled antibody twenty-four hours later. The fate of the antibody following in vivo combination with its antigen was determined by a metabolic balance study of the I^{131}.

Regardless of the order of administration of antibody and antigen, approximately 62 per cent of labeled antibody was eliminated from the circulation within 1 hour and 86 per cent within six hours after injection. Associated with the elimination of antibody was a rise in nonprotein-bound I^{131} in the circulation which indicated an accelerated catabolism of the anti-BSA antibody. Between one-third and one-half of the antibodies was catabolized within six hours, and virtually all within forty-eight hours. The antibody was presumed to be catabolized as part of an antigen-antibody complex. It was concluded that after elimination from the circulation as specific complexes, antiprotein antibodies in the rabbit are catabolized at a rate comparable to that of heterologous serum protein antigens. M. C.

Studies on the Activation of Serum Protease by an Antigen-Antibody System. Jemski, J. V., Flick, J. A., and Stinebring, W. R.: J. Exper. Med. **97**: 439, 1953.

Serum protease, also known as plasmin or fibrinolysin, may be activated by the adsorption of inhibitors or by activators prepared from bacterial

sources, such as streptokinase or staphylokinase. A number of investigators have reported that antigen-antibody combinations can also act as activators for serum protease. This finding could not be confirmed. Crystallized egg albumin was used to immunize rabbits and guinea pigs. Crude egg albumin was also used in some animals. In many instances the immune sera were purified by salt fractionation to obtain the entire globulin fraction, including both antibody and serum protease. The addition of antigen to immune serum or to the globulin fraction of immune serum failed to activate serum protease, although streptokinase added to the same system afterward was effective in releasing protease activity. Neither variations in proportion between antigen and antibody nor the length of time of antigen-antibody contact nor incubation temperatures altered this result. Experiments using preformed precipitates of antigen and immune rabbit globulin and immune rabbit serum, as well as experiments in which antigen and antibody combined in the presence of the precursor, failed to reveal protease activation. Repeated studies in guinea pigs and in human beings were confirmatory of the lack of effect of precipitin antigen-antibody combination on serum protease activity in vitro. It was concluded that "the protease content of serum during anaphylaxis is not primarily dependent upon an antigen-antibody union."

K.

Treatment of Rheumatic Diseases by Desensitization With an Aqueous Extract of Streptococci. II. Rheumatic Fever, Chorea, and Rheumatic Carditis. Small, J. C., and Small, J. C., Jr.: Ann. Allergy **12**: 150, 1954.

Considerable evidence exists which indicates that streptococci play an important etiologic role in rheumatic fever and that the inflammatory lesions of this disease may be an expression of allergic hypersensitivity to the streptococci or its products.

Employing an aqueous extract of streptococci in properly graduated and spaced doses, the authors state that they have obtained remarkable improvement in patients with rheumatic fever, chorea, and rheumatic carditis.

H. F.

Focal Necrotizing Glomerulonephritis and Diffuse Hypersensitivity Angiitis. Report of Case With Documentation by Renal Biopsy Three Years Before Death. Kaufman, M. A.: Arch. Path. **57**: 80, 1954.

The case of a 33-year-old white man who came to autopsy is presented. The primary post mortem diagnosis was necrotizing angiitis and focal necrotizing glomerulonephritis. There are previous reports in the literature of similar cases in which an allergic etiology was suspected.

Although penicillin was administered several times to this patient, the lesions preceded any known penicillin therapy, as evidenced by the finding of such lesions in biopsy material taken three years before the terminal illness.

It is thought that the allergen responsible acted initially upon segments of the glomerular capillaries in mild intermittent exposures. Subsequently, an overwhelming exposure resulted in the fulminating necrotizing angiitis. Allergic studies were not reported.

J. S.

Leishmanide: Report of a Case. Berlin, C.: Brit. J. Dermat. **65**: 265, 1953.

Leishmanide is reported in a 12-year-old girl who had been under observation for *Leishmaniasis recidiva* for many years. The allergic eruption which involved most of the uncovered parts of the body was nonpruritic and consisted

of numerous discrete pinkish papules. Histologic examination of the papules revealed many tubercles. X-rays and tuberculin tests failed to reveal any evidence of tuberculosis. An intracutaneous test with leishmania vaccine in a dilution of 1:1,000,000 produced within twenty-four hours a massive swelling and erythema which was visible for a week. The Leishmanide remained for about two months. It is suggested that similar allergic reactions may be encountered in other cases of *Leishmaniasis recidiva* showing strongly positive reactions to leishmania vaccine. E. W.

Aspermatogenesis in the Guinea Pig Induced by Testicular Tissue and Adjuvants. Freund, J., Lipton, M. M., and Thompson, G. E.: J. Exper. Med. **97**: 711, 1953.

Guinea pigs were injected intracutaneously with various types of guinea pig testicular or sperm cell antigens mixed with a paraffin oil emulsion and killed tubercle bacilli. They were sacrificed and their testes were examined histologically from fourteen to 153 days after injection. Testicular damage in the early stages appeared as a diminution of the number of mature spermia and the presence of a few swollen exfoliated cells in some tubules. Later no spermia were present and there was conspicuous degeneration and exfoliation of spermatogenic cells. The spermatogonia were the last cells to be affected and finally disappeared altogether. The Sertoli cells sometimes became hyperplastic and these cells and the basement membrane remained after the tubules were devasated. There were no frank inflammatory changes. The Leydig cells were unaffected. The process began in about ten days and lasted as long as five months. This effect could be produced by the injection of one of the guinea pig's own testes, by whole tissue suspension of testicular material from other guinea pigs, by a "mitochondrial fraction" of testicular suspension, by guinea pig spermia, by testes of sexually immature guinea pigs, and by the injection of the adjuvant materials alone, either in the testis, or subcutaneously on the abdomen, or intracutaneously in the inguinal regions, or intraperitoneally. Injections of adjuvant at more distant sites failed to result in testicular changes. An alcoholic extract of testes did not cause damage, nor did the injection at a suitable distance of kidney or liver tissue with adjuvant, or rabbit testicular tissue. The omission of tubercle bacilli from the adjuvant mixture prevented the appearance of testicular damage and injection of tubercle bacillus simultaneously but at a different site from the antigen-in-oil mixture did not restore its antigenic potency. Guinea pigs immunized with adjuvant plus rabbit spinal cord developed encephalomyelitis and some of these animals showed testicular damage. When guinea pig brain was used with adjuvants as the antigens, the testicular damage rate was high. Complement-fixing antibodies were demonstrated and seemed to correlate with the testicular damage. Antihyaluronidase titres were obtained but did not correlate with testicular damage. K.

Studies on the Transfer of Lymph Node Cells. I. Appearance of Antibody in Recipients of Cells From Donor Rabbits Injected With Antigen. Harris, S., Harris, T. N., and Farber, M. B.: J. Immunol. **72**: 148, 1954.

Rabbits were injected in the hind foot pads with suspensions of dysentery bacilli and other antigens; four days later, the popliteal lymph nodes were excised. Cells teased from these lymph nodes were washed and then injected intravenously into fresh rabbits. Serum was collected daily thereafter from the latter animals and titrated for agglutinins against the antigen.

Antibody appeared in the serum of the recipient rabbit on the first day after transfer of the cells. The titre increased on the second and third days, remained at that level until about the fifth day, and then declined steadily until the 23rd to 40th day when the titre was no longer measurable.

When the lymph node cells were injured or killed by various physical means, they were no longer capable of effecting the appearance of antibody when transferred to recipients. It seemed unlikely that antibody formation was induced either by the transfer of preformed antibody contained within the cells or by the transfer of antigen which would induce active immunization. It was suggested that the transferred cells might contain a mechanism of antibody formation which could function in the recipient animal and thereby synthesize antibody. M. C.

Glycogen, an Immunologically Specific Polysaccharide. Heidelberger, M., Aisenberg, A. C., and Hassid, W. Z.: J. Exper. Med. **99**: 343, 1954.

Glycogens obtained from various sources including livers of rabbit, rat, horse, cat, dog, human beings with Von Gierke's disease, horse muscle, Ascaris, oyster, and maize were shown to react immunologically with antipneumococcal horse sera to types II, VII, IX, XII, XIII, XX, and XXII, but not to types IIIC, XXXVII, and only weakly to types XI and XXVIII. Fractionation and reprecipitation of glycogen did not impair ability of glycogen to precipitate these antisera but degradation of glycogen by saliva prevented precipitation. Saliva did not impair precipitation of antibody by homologous type-specific polysaccharide. The chemical basis for these cross reactions is discussed. K.

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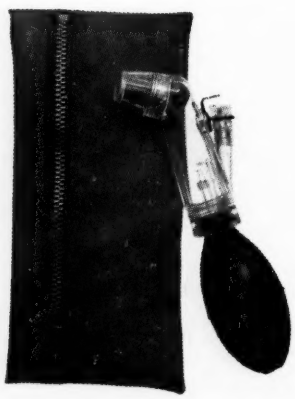

Inhalation of hand-nebulized Isuprel mist dilates bronchi *without delay*.[1] Night or day — anywhere — the nearness of this swift relief lessens the patient's fear of asthmatic paroxysms. Isuprel aborts an attack of mild asthma almost at once, severe asthma *within 3 minutes*.[2] It relieves bronchospasm even in status asthmaticus.

Isuprel alone in 85%

Compare results: "85% of the severely ill hospital-treated patients were kept comfortable by this drug [Isuprel] alone."[3] Isuprel is one of the most effective agents available for self-medication.[4] There is no doubt that 1 per cent Isuprel is more effective than 1 per cent epinephrine aerosol.[1]

side actions minimal

Inhaled Isuprel is exceptionally well tolerated[1-3] and virtually without effect on the cardiovascular system in suggested dosage.[1,5,6] It is "particularly suitable for inhalation in asthmatics with hypertension."[6]

ISUPREL®
HYDROCHLORIDE

Winthrop-Stearns INC.
NEW YORK 18, N. Y. • WINDSOR, ONT.

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Isuprel (brand of isopropylarterenol) **and Glossets** (brand of sublingual tablets) **trademarks Reg. U. S. Pat. Off.**